

AFTERNOON SESSION

(SUBJECT PROCEEDINGS RESUMED AT 2:00 P.M.)

THE COURT: SINCE OUR RECESS AT ABOUT 10:15 THIS MORNING, I'VE HAD AN OPPORTUNITY TO GO THROUGH THE PAPERS THAT WERE SUBMITTED TODAY AND I'M READY TO PROCEED. MR. ZIMMERMAN AND MR. SAILER, DO YOU WANT TO PROCEED, OR WOULD YOU PREFER TO HAVE THE COMMISSION PROCEED?

MR. SAILER: WELL, YOUR HONOR, AS I UNDERSTAND IT, THE COMMISSION HAS NO WITNESSES AND WE HAVE, AS YOUR HONOR KNOWS, A BRIEF DEMONSTRATION AND AS I ADVISED YOUR CHAMBERS AT NOONTIME, I INTEND TO ASK THE SAME GENTLEMAN WHO GIVES THE DEMONSTRATION ABOUT SIX SUBSTANTIVE QUESTIONS. I HAVE SO ADVISED THE COMMISSION THE MOMENT I MADE THAT DECISION.

THE COURT: VERY WELL.

MR. SAILER: SO WE ARE READY TO PROCEED, YOUR HONOR.

THE COURT: YOU MAY PROCEED.

MR. SAILER: LET ME ASK YOUR HONOR'S PLEASURE. THE DEMONSTRATION, I WOULD THINK, WOULD BE MUCH CLEARER, SIMPLER, AND EASIER IF IT WERE NOT DONE IN AN INTERROGATIVE MODE. IT IS PURELY FOR BACKGROUND AND SINCE WE'VE ALL BEEN TALKING ABOUT ACS TECHNOLOGY HERE FOR DAYS, IT'S PURELY TO SHOW WHAT A VARIABLE SPEED CONTROLLER IS. AND WITH YOUR HONOR'S PERMISSION, I WOULD LIKE MR. RICHARD BAKER WHO IS THE INVENTOR OF THE TECHNOLOGY TO SIMPLY IN A NARRATIVE WAY DEMONSTRATE IT. I, THEREAFTER, WILL REQUEST PERMISSION TO PUT HIM VERY BRIEFLY ON

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1 RECORD, PLEASE?

2 A RICHARD H. BAKER, 26 WILDWOOD DRIVE, BEDFORD,  
3 MASSACHUSETTS.

4 Q AND BY WHOM ARE YOU EMPLOYED, MR. BAKER?

5 A I AM CONSULTANT TO THE EXXON CORPORATION.

6 Q SPECIFICALLY EXXON ENTERPRISES?

7 A YES.

8 Q AND IS THAT A FULL-TIME EMPLOYMENT?

9 A YES.

10 Q AND HOW LONG, APPROXIMATELY, HAVE YOU BEEN EMPLOYED  
11 FULL-TIME BY EXXON ENTERPRISES?

12 A SINCE NOVEMBER 1, 1976, ALMOST THREE YEARS.

13 Q AND PRIOR THERETO, WHAT WAS YOUR EMPLOYMENT?

14 A I WAS ON THE STAFF OF THE MASSACHUSETTS INSTITUTE OF  
15 TECHNOLOGY AS A LECTURER IN THE DEPARTMENT OF ELECTRICAL  
16 ENGINEERING.

17 Q DOES THE TERM, "ACS TECHNOLOGY," MEAN ANYTHING TO YOU?

18 A YES.

19 Q AND WHAT DOES IT MEAN TO YOU?

20 A IT MEANS AC SYNTHESIS, A METHOD OF SYNTHESIZING  
21 WAVE FORMS TO DRIVE ELECTRIC MOTORS.

22 Q AND HAVE YOU HAD ANY -- PLAYED ANY PART IN THE  
23 DEVELOPMENT OF THAT TECHNOLOGY?

24 A WELL, YES, I'VE BEEN WORKING ON THIS FOR TEN YEARS  
25 AT MIT AND HERE AT EXXON.

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1 OF AN ACTUAL SITUATION. BECAUSE IT'S PORTABLE, WE HAD TO MAKE  
2 IT SMALL. THE EQUIPMENT CONSISTS OF A SMALL RESERVOIR  
3 PARTIALLY FILLED WITH LIQUID. THE LIQUID IS DRAWN FROM THE  
4 TANK BY A CENTRIFUGAL PUMP, THIS WHITE OBJECT HERE (INDICATING),  
5 DRIVEN BY A MOTOR, AN ORDINARY ELECTRICAL AC MOTOR.

6 IN THE ACTUAL SITUATION, THIS MOTOR AND PUMP ARE  
7 VERY LARGE. A 25 HORSEPOWER MOTOR IS ABOUT THIS BIG AND  
8 ROUND AND LONG (DEMONSTRATING) AND WEIGHS ABOUT 500 POUNDS.  
9 THE PUMP WOULD WEIGH OVER A HUNDRED POUNDS. THIS IS A  
10 ONE-EIGHTH HORSEPOWER, A SMALL ONE. THE PUMP FORCES LIQUID  
11 THROUGH THIS FLOW METER AND THIS SILVER BOBBIN WILL RISE WHEN  
12 THE LIQUID IS FLOWING AND ITS LEVEL INDICATES THE RATE OF FLOW.  
13 THE LIQUID THEN IS FORCED THROUGH A CONTROL VALVE WHICH YOU CAN  
14 OPEN AND CLOSE, A VALVE SIMILAR TO SHUTTING OFF THE WATER IN  
15 THE KITCHEN SINK. THE LIQUID IN A REAL CASE GOES SOMEWHERE  
16 ELSE, BUT BECAUSE IT IS A PORTABLE MODEL, WE PUT IT BACK IN  
17 THE SAME TANK.

18 FINALLY, THERE IS A WATT METER HERE TO MEASURE THE  
19 TOTAL ELECTRIC POWER CONSUMED BY THE MACHINE. NOW AN  
20 INDUSTRIAL PUMPING APPLICATION FOR PURPOSES OF CONTROL, IT IS  
21 NECESSARY THAT LIQUIDS BE PUMPED AT A VARIABLE RATE. WE WILL  
22 NOW DEMONSTRATE HOW THIS IS DONE IN INDUSTRY. WE PLUG IN  
23 THE MOTOR TO A NORMAL 120 VOLT 60-CYCLE POWER THAT'S COMING  
24 FROM THE OUTLET (INDICATING). THE FLOW INDICATOR SCALE IS  
25 85, INDICATING FULL FLOW. THE MOTOR IS RUNNING AT FULL SPEED.

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1 IT IS DRAWING -- I KNOW THIS IS DIFFICULT TO SEE, BUT THE FULL  
2 SCALE IS 300 WATTS. THIS IS ZERO WATTS. STRAIGHT-UP IS  
3 150 WATTS. THE MOTOR IS DRAWING ABOUT 185 WATTS OF POWER.

4 NOW THE WAY INDUSTRY DOES TODAY, COMMON PRACTICE  
5 IS TO CHOKE THE FLOW OF LIQUID BY CLOSING THE VALVE. AND IF  
6 YOU WATCH THE INDICATOR, YOU WILL SEE THAT THE FLOW RATE  
7 CHANGES. BUT VERY IMPORTANTLY, THE POWER CONSUMED BY THE MOTOR  
8 DOES NOT CHANGE WHEN YOU DO THIS. IT STAYS ABOUT THE SAME.  
9 THIS IS ANALOGOUS TO DRIVING AN AUTOMOBILE ALWAYS FULL-THROTTLED  
10 THE THROTTLE FULL-CLOSED, AND CONTROLLING THE SPEED OF THE CAR  
11 WITH THE BREAKS. WHAT HAPPENS IS YOU USE EXTRA GASOLINE AND  
12 THE BREAKS GET HOT. IN THIS CASE, THE MOTOR IS ALWAYS RUNNING  
13 FULL TILT AND WE CHANGE THE FLOW RATE BY CHOKING THE OUTPUT.  
14 IT WORKS WELL. THAT'S WHAT THEY USE IN INDUSTRY, BUT IT'S  
15 VERY INEFFICIENT BECAUSE THERE'S NOT MUCH OUTPUT POWER AND  
16 THERE'S A LOT OF INPUT POWER. THAT'S THE WAY IT IS COMMONLY  
17 DONE TODAY.

18 NOW IT IS WELL KNOWN THAT IF WE COULD CONTROL THE  
19 SPEED OF THE PUMP, THE SPEED OF THE MOTOR, PUMP SLOWER, THE  
20 LIQUID WOULD FLOW SLOWER. WE WOULDN'T HAVE TO CHOKE WITH THE  
21 VALVES. THIS IS DONE SOMETIMES IN INDUSTRY WITH DC MOTORS  
22 FOR THOSE LIQUIDS THAT YOU CAN'T CHOKE DOWN WITH THE VALVES.  
23 IT WOULD BE DAMAGING. BUT THE VAST MAJORITY OF MOTORS IN  
24 INDUSTRY ARE AC MOTORS. THEY ARE MORE RELIABLE, LESS EXPENSIVE  
25 AND THEY WORK BETTER. AND IT'S ALSO WELL KNOWN THAT THERE ARE

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1 TECHNIQUES TO CONTROL THE SPEED OF AN AC MOTOR. IT'S CALLED  
2 THE VARIABLE SPEED DRIVE. THESE DRIVES ARE ON THE MARKET, BUT  
3 THEY ARE RELATIVELY LARGE, RELATIVELY INEFFICIENT, AND THEY  
4 ARE QUITE EXPENSIVE.

5 THIS IS A VARIABLE SPEED DRIVE MADE WITH THE ACS  
6 TECHNOLOGY. IN THIS BOX ARE STANDARD COMMERCIALY AVAILABLE  
7 PARTS. IT CONSISTS OF A MICROPROCESSOR, A COMPUTER ON A  
8 SILICON CHIP, IF YOU WILL, AND POWER TRANSISTORS.  
9 MICROPROCESSORS ARE CALCULATED--CALCULATES THE ENERGY THAT  
10 THE MOTOR NEEDS, THE AMOUNT OF ELECTRICITY, AND THE POWER  
11 TRANSISTORS REGULATE THE FLOW TO THE MOTOR. THIS BOX HAS NOW  
12 BEEN SET TO PUT OUT THE SAME KIND OF POWER AS THE HOUSE WALL  
13 OUTLET, 120 VOLTS, 60 HERTZ.

14 WE WILL NOW PLUG THE MOTOR INTO THE ACS HERE.  
15 AGAIN, YOU HAVE FULL FLOW AT ABOUT THE SAME POWER. HOWEVER,  
16 INSTEAD OF CHOKING THE VALVE WHICH WE COULD DO, WE LEAVE IT  
17 FULL OPEN AND WE TURN DOWN THE SPEED OF THE MOTOR. NOW THE  
18 FLOW GOES DOWN AND SO DOES THE POWER INPUT. THE FURTHER DOWN  
19 YOU GO, THE LESS THE POWER. THE SETTING IS AT 50 PERCENT.  
20 WE ARE DRAWING ABOUT 70 WATTS, INSTEAD OF THE 185, FOR A  
21 SAVING OF 115 WATTS, OR TWO-THIRDS OF THE ELECTRICAL INPUT.  
22 AGAIN, THIS IS LIKE THE CAR WHERE INSTEAD OF CHOKING THE OUTPUT  
23 PUTTING ON THE BREAKS, YOU TAKE YOUR FOOT OFF THE GAS PEDAL.  
24 THIS IS AN ELECTRONIC THROTTLE AND IT THROTTLES BACK THE MOTOR  
25 AND SAVES ENERGY.

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1           THIS IS IMPORTANT BECAUSE IN INDUSTRY PUMPS NEVER  
2 RUN THE FULL SPEED, ONLY ON STARTUPS. THEY USUALLY RUN BETWEEN  
3 80 PERCENT AND 30 PERCENT CAPACITY. THEREFORE, A LOT OF  
4 ENERGY CAN BE SAVED.

5           IN CONCLUSION, I WOULD LIKE TO SAY THAT THE ACS  
6 TECHNOLOGY IS IMPORTANT. IT IS WELL KNOWN THAT ELECTRONIC  
7 SPED DRIVES SAVES ENERGY AND COULD MAKE MOTORS RUN AT VARIABLE  
8 RATES. THE ACS'S TECHNOLOGY IS IMPORTANT BECAUSE IT'S  
9 INEXPENSIVE. RIGHT NOW VARIABLE SPEED DRIVES ARE NOT USED  
10 WIDELY IN INDUSTRY BECAUSE THEY ARE NOT COST-EFFECTIVE. THIS  
11 IS A CALCULATOR. IT IS A DIGITAL CALCULATOR. IT CALCULATES  
12 THE POWER TO THE MOTOR THE WAY A HAND-HELD CALCULATOR CALCULATES  
13 DATA. IN FACT, WE CALL IT POWER CALCULATION, OR POWER  
14 PROCESSOR. THIS IS IMPORTANT TO INDUSTRY BECAUSE 27 PERCENT  
15 OF ALL THE ELECTRICAL ENERGY USED IN THE UNITED STATES IS  
16 USED BY INDUSTRY AND 85 PERCENT OF THAT ENERGY IS USED BY  
17 MOTORS, ONE HORSEPOWER AND LARGER. THERE ARE 20 MILLION  
18 MOTORS, LARGE MOTORS, IN INDUSTRY TODAY AND THEY ARE GOING IN  
19 AT THE RATE OF TWO MILLION PER YEAR. FIFTY-FIVE PERCENT OF  
20 THESE MOTORS ARE USED IN PUMPS, OR 11 MILLION OF THEM. MUCH  
21 OF THAT ENERGY CAN BE SAVED, AS WE HAVE DEMONSTRATED. IN  
22 ADDITION, THERE ARE SEVERAL MILLION MORE MOTORS USED IN  
23 VOLUME CONTROL OF AIR, VARIABLE VOLUME CONTROL, IN COMPRESSORS,  
24 IN REFRIGERATION IN INDUSTRY. THESE APPLICATIONS CAN ALSO  
25 ENJOY SIMILAR SAVINGS THROUGH VARIABLE SPEED DRIVES.

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1 WHICH STATES: "THUS FOR A LICENSEE THAT IS NOT PRESENTLY IN  
2 THE DRIVE INDUSTRY, I ESTIMATE THAT IT WILL TAKE TWO YEARS  
3 FROM THE TIME A LICENSE IS ISSUED TO PRODUCE A MARKETABLE  
4 25 HORSEPOWER UNIT SIMILAR TO THE ONES THAT EXXON IS NOW  
5 TESTING."

6 DO YOU HAVE AN OPINION AS TO THE TRUTH OR FALSITY  
7 OF THAT STATEMENT?

8 A YES, I DO.

9 Q AND WHAT IS YOUR OPINION?

10 A I BELIEVE THAT THAT TIME ESTIMATE IS GROSSLY  
11 OVERESTIMATED.

12 Q ASSUMING A COMPANY NOT NOW IN THE DRIVES BUSINESS  
13 BUT NOW IN THE ELECTRICAL EQUIPMENT INDUSTRY OR BROADLY IN THE  
14 ELECTRONICS INDUSTRY, WOULD YOU HAVE AN OPINION AS TO HOW LONG  
15 IF THE KIND OF TECHNOLOGY TRANSFER WE ARE TALKING ABOUT WERE  
16 MADE IT WOULD IN FACT TAKE FOR SUCH A LICENSEE TO PRODUCE A  
17 MARKETABLE 25 HORSEPOWER UNIT SIMILAR TO THE ONES THAT EXXON  
18 IS NOW TESTING? DO YOU HAVE AN OPINION, I FIRST ASK?

19 A YES. I BELIEVE IT WOULD NOT TAKE OVER FOUR MONTHS.

20 Q NOW THE AFFIDAVIT GOES ON TO SAY THAT THE CORRESPONDIN'  
21 PERIOD, I.E. THE PERIOD TO PRODUCE A MARKETABLE 25 HORSEPOWER  
22 UNIT AFTER TECHNOLOGY TRANSFER, FOR A CURRENT DRIVE  
23 MANUFACTURER WOULD BE APPROXIMATELY ONE YEAR. DO YOU HAVE  
24 AN OPINION AS TO THE TRUTH OR FALSITY OF THAT STATEMENT?

25 A I BELIEVE THAT IS, ALSO, OVERESTIMATED.

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1 Q DO YOU HAVE AN OPINION AS TO APPROXIMATELY HOW LONG  
2 THE PERIOD WOULD, IN FACT, BE?

3 A ABOUT TWO MONTHS.

4 Q I THEN DRAW YOUR ATTENTION TO THE NEXT SENTENCE OF  
5 THE AFFIDAVIT WHICH STATES THAT, "FOR BOTH A NEW ENTRANT AND  
6 A CURRENT DRIVE MANUFACTURER, I ESTIMATE IT WILL TAKE ANOTHER  
7 YEAR AFTER INTRODUCING THE 25 HORSEPOWER UNIT TO THE MARKET  
8 TO PRODUCE A MARKETABLE 50 HORSEPOWER UNIT." DO YOU HAVE AN  
9 OPINION AS TO THE TRUTH OR FALSITY OF THAT STATEMENT?

10 A YES, I DO.

11 Q AND WHAT IS YOUR OPINION?

12 A I BELIEVE THAT THAT IS OVERESTIMATED. I BELIEVE IT  
13 WOULD BE A VERY SHORT PERIOD.

14 Q TAKING THE PERIOD, OR A PERIOD, SUBSEQUENT TO THE  
15 PRODUCTION OF A MARKETABLE 25 HORSEPOWER UNIT, ARE YOU ABLE  
16 TO AT LEAST ROUGHLY QUANTIFY THE ADDITIONAL PERIOD THAT YOU  
17 THINK WOULD BE INVOLVED BEFORE SUCH A LICENSEE COULD PRODUCE  
18 A 50 HORSEPOWER UNIT?

19 A YES, I CAN. ONE OF THE ADVANTAGES OF THE ACS  
20 TECHNOLOGY IS THAT IT'S DIGITAL COMPUTER TECHNOLOGY. IT WOULD  
21 ONLY TAKE ABOUT TWO WEEKS.

22 Q TWO ADDITIONAL WEEKS?

23 A TWO ADDITIONAL WEEKS.

24 MR. SAILER: I HAVE NO FURTHER QUESTIONS.

25 THE COURT: DOES THE COMMISSION HAVE SOME QUESTIONS?

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1 A THAT'S A VERY DIFFICULT QUESTION. YOU SEE, YOU'RE  
2 ON THE THRESHOLD OF POWER LOGIC. THE ACS TECHNOLOGY IS A  
3 DIGITAL TECHNOLOGY, LIKE THE CALCULATOR. THE ENERGY-SAVINGS  
4 IT AFFORD IS VERY USEFUL AND I BELIEVE THAT A LOT OF PEOPLE  
5 ARE GOING TO GO THIS WAY. THIS IS THE BEGINNINGS OF A  
6 POWER PROCESSING INDUSTRY LIKE THE DATA PROCESSING INDUSTRY  
7 WAS SEVERAL YEARS AGO.

8 Q ARE YOU IN A POSITION TODAY TO MARKET ACS TECHNOLOGY  
9 AT EXXON? COULD YOU, IF YOU WERE GIVEN A PRODUCTION FACILITY,  
10 PUT SOME ACS DRIVES TOGETHER AND MARKET THEM IN UNITS OF --  
11 IN PRODUCTION LOTS OF, LET'S SAY, A THOUSAND AND GO OUT AND  
12 SELL THEM THE WAY THEY ARE TODAY, OR DO YOU HAVE FURTHER TESTIN  
13 TO DO? DO YOU HAVE FURTHER RESEARCH TO DO? CAN YOU IMPROVE  
14 UPON THEM?

15 A THAT'S A SOMEWHAT COMPLICATED QUESTION. I AM THE  
16 INVENTOR. MY WHOLE LIFE HAS BEEN IN RESEARCH AND DEVELOPMENT.  
17 I AM NOT A MARKETING MAN, OR PRODUCTION MAN.

18 Q YOU SAID YOU ARE NOT A PRODUCTION MAN?

19 A NOT A PRODUCTION SPECIALIST, NO.

20 Q YOUR AREA OF SPECIALTY IS REALLY RESEARCH AND  
21 DEVELOPMENT, ISN'T THAT CORRECT?

22 A THAT'S CORRECT.

23 Q SO YOU ARE NOT FAMILIAR WITH THE DIFFICULTIES OF  
24 PUTTING THIS TECHNOLOGY INTO ACTUAL PRODUCTION, IS THAT CORRECT?

25 A WELL, I'VE HAD A LITTLE PRODUCTION EXPERIENCE. YOU

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Q DO YOU KNOW IF UNDER THE LICENSE AGREEMENT, UNDER WHICH MIT LICENSED THOSE PATENTS TO EXXON, WHETHER EXXON HAS THE RIGHT TO SUBLICENSE THOSE PATENTS TO ANYONE ELSE?

A I NEVER READ THE AGREEMENT. I DON'T KNOW.

Q YOU DON'T KNOW IF THERE ARE SUBLICENSING RIGHTS?

A I HAVE NO KNOWLEDGE OF THE AGREEMENT.

Q YOU SAID BEFORE THAT THE ACS DEVICE, WHICH WE SEE THERE (INDICATING), CAN SAVE ENERGY BY CONTROLLING THE AMOUNT OF ELECTRICITY THAT GOES TO THE MOTOR? ISN'T THAT CORRECT?

A YES.

Q DOESN'T ANY AC DRIVE, OR DC DRIVE, CONTROL THE AMOUNT OF ENERGY THAT GOES TO A MOTOR IN ORDER TO VARY ITS SPEED?

A YES.

Q AND SO ISN'T IT TRUE THAT ANY EVSD DEVICE CAN SAVE ENERGY BY CONTROLLING THE AMOUNT OF ELECTRICITY THAT GOES TO A MOTOR AND THAT THE ACS DEVICE IS ONLY ONE TYPE OF A LARGE NUMBER OF TYPES OF EVSD DEVICES?

A IT IS WELL-KNOWN THAT AN AC MOTOR CAN MADE TO RUN AT VARIABLE SPEED IF YOU CONTROL BOTH THE VOLTAGE AND THE FREQUENCY FED TO THE MOTOR. THERE ARE DEVICES ON THE MARKET. THEY ARE RATHER COMPLEX. THIS TECHNOLOGY IS ALL DIGITAL. IT'S LIKE A COMPUTER TECHNOLOGY. IT'S MUCH SIMPLER THAN THE OLDER TECHNOLOGY.

Q ARE YOU FAMILIAR WITH THE LSI DRIVE MANUFACTURER BY PTI CONTROLS?

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1 A VERY LITTLE, YOUR HONOR. HE WAS THERE ACTIVE AT  
2 MIT A LONG TIME AGO BEFORE I WAS ACTIVE IN THIS AREA.

3 Q BUT YOU KNOW HIM?

4 A I KNOW HIM WHEN I SEE HIM. I HAVE MET HIM ONCE, OR  
5 TWICE.

6 Q WHEN YOU DESCRIBED THE CONTROL--AND I'M REFERRING TO  
7 THAT BOX--YOU ARE REFERRING TO THE BOX, ALONE, AND YOU ARE NOT  
8 REFERRING TO THE MOTOR AS WELL, ARE YOU?

9 A THAT IS CORRECT.

10 Q AND WHEN YOU USE THE TERM, "DRIVE," YOU MEAN THE  
11 CONTROL, OR DO YOU MEAN THE CONTROL PLUS THE MOTOR?

12 A I MEAN ELECTRONICS, VARIABLE SPEED DRIVE, THE  
13 ELECTRONICS.

14 Q BUT NOT THE MOTOR?

15 A NO, SIR.

16 Q IN ANY OF YOUR PROTOTYPES, HAS THE CONTROL BEEN  
17 INCORPORATED IN THE MOTOR, ITSELF?

18 A NOT AS PART OF THE MOTOR, PER SE.

19 Q BUT IT'S ALWAYS SEPARATE AND DISTINCT?

20 A YES, THAT'S CORRECT.

21 Q AND HOW BIG A PROTOTYPE HAVE YOU MADE IN TERMS OF  
22 THE MOTOR TO WHICH IT WOULD BE ATTACHED?

23 A IN TERMS OF HORSEPOWER . . .

24 Q THAT'S CORRECT.

25 A . . . 100 HORSEPOWER.

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1 Q YOU'VE GONE UP AS HIGH AS 100 HORSEPOWER?

2 A YES, YOUR HONOR.

3 Q SO I TAKE IT THAT FROM YOUR INVESTIGATION, YOU WOULD  
4 ENVISION THAT IT COULD APPLY TO MOTORS OF ANY HORSEPOWER, IS  
5 THAT CORRECT?

6 A YES, I BELIEVE IT CAN GO UP TO THOUSANDS OF HORSEPOWER.

7 Q HOW MANY PATENTS ARE INVOLVED IN THIS CONTROL THAT  
8 YOU HAVE INVENTED?

9 A THERE WERE SIXTEEN ORIGINALLY AT MIT. AT EXXON,  
10 WE HAVE FILED FOR TWELVE, I BELIEVE. FOUR HAVE ISSUED AND  
11 THERE ARE ANOTHER TWENTY IN PREPARATION. THE TOTAL NUMBER IS  
12 56.

13 Q ALTHOUGH THIS IS NOT YOUR PROVINCE, NAMELY THE  
14 TRANSFER OF TECHNOLOGY, BUT HOW MANY PATENTS WOULD BE INVOLVED  
15 IN THE TRANSFER OF ACS TECHNOLOGY?

16 A WELL, THERE ARE SEVERAL KEY PATENTS AND THEN SOME  
17 DETAIL CIRCUIT PATENTS. I WOULD ASSUME THAT ALL OF THEM WOULD  
18 BE, BUT I DON'T KNOW.

19 Q FOLLOWING ALONG THAT QUESTION, HOW MUCH IN TERMS  
20 OF PERSONNEL WOULD BE REQUIRED TO MAKE A TECHNOLOGY TRANSFER  
21 EFFECTIVE -- AND I'M TALKING ABOUT THE LEASING, OR THE LENDING  
22 OF EXXON INDIVIDUALS TO A PARTICULAR LICENSEE, PROPOSED  
23 LICENSEE?

24 A I BELIEVE SURPRISINGLY FEW AND THE REASON IS THAT  
25 THIS IS A VERY SIMPLE TECHNOLOGY. IT'S DIGITAL. IT'S SIMPLY

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1 ALL SOLID-STATE, A CALCULATOR, A LITTLE COMPUTER CONTROLLING  
2 TRANSISTORIZED SWITCHES, AND MOST OF INDUSTRY ARE FAMILIAR  
3 WITH BOTH OF THESE VERY INTIMATELY. THE KEY TO THE ACS IS  
4 THAT IT'S A DIFFERENT CONFIGURATION. IT WAS A DIFFERENT  
5 CONNECTION PATTERN, IF YOU WILL, TO THE SYSTEM. ONCE YOU  
6 KNOW THAT PATTERN, IT'S VERY EASY TO PRODUCE IT.

7 Q IN TERMS OF HOURS OR DAYS, HOW MUCH WOULD BE INVOLVED  
8 IN ACTIVITY BY EXXON PERSONNEL TO MAKE A TECHNOLOGY TRANSFER  
9 EFFECTIVE?

10 A I BELIEVE . . .

11 Q WELL, FIRST OF ALL, IT WOULD DEPEND ON HOW  
12 KNOWLEDGEABLE THE PROPOSED LICENSEE IS IN THIS PARTICULAR LINE  
13 OF BUSINESS, ISN'T IT?

14 A (NODDING.)

15 Q LET'S ASSUME THEY ARE ALREADY IN THE DRIVE BUSINESS  
16 BUT THEY ARE INTERESTED IN BEING A PROPOSED LICENSEE OF YOUR  
17 TECHNOLOGY . . .

18 A IF THEY ARE ALREADY . . .

19 Q . . . HOW LONG WOULD ONE, OR MORE INDIVIDUALS FROM  
20 EXXON HAVE TO SPEND AT SUCH A PLANT?

21 A IF THEY ARE ALREADY IN THE DRIVE BUSINESS, VERY  
22 LITTLE. WHEN SOMEONE SEES WHAT WE DO, IT'S READILY APPARENT  
23 HOW IT'S DONE AND THE ADVANTAGES OF IT.

24 Q WELL, HOW DID YOU GET A PATENT IF IT'S ALL THAT  
25 READILY APPARENT?

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IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT

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No. 80-2043

United States Court of Appeals  
for the District of Columbia Circuit

FILED NOV 3 1980

FEDERAL TRADE COMMISSION,

GEORGE A. FISHER  
CLERK

Plaintiff-Appellee,

v.

EXXON CORPORATION,

Defendant-Appellant.

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On Appeal from the United States District Court  
For the District of Columbia

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SUPPLEMENTAL APPENDIX OF APPELLEE

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November 3, 1980